

IN THE CLAIMS:

1-11. (Cancelled).

12. (new) A method of producing a recording medium containing an information signal, comprising:

applying a radiation beam, in response to an information signal, to a first area of an information layer of a recording medium to cause the first area of the information layer to assume a first state thereby forming a mark, and

applying the radiation beam to a second area of the information layer, before and after the mark, while pulsing the beam to cause the second area of the information layer to assume a second state that is different than the first state, the pulses including erase pulses having an erase power level ( $P_e$ ) and a bias power level ( $P_b$ ) between the erase pulses, the bias power level ( $P_b$ ) being in a range between zero and the erase power level ( $P_e$ ).

13. (new) The method of claim 12, in which:

the information layer includes a material having a phase that is reversibly changeable between the first state and the second state;

the first state is an amorphous state; and

the second state is a crystalline state.

14. (new) The method of claim 12, wherein the range of the bias power level ( $P_b$ ) is less than a write power level ( $P_w$ ).

15. (new) The method of claim 12, in which:

the bias power level ( $P_b$ ) increases in the range between zero and the erase power level ( $P_e$ ) as the recording speed ( $V$ ) increases when the recording speed is below a chosen recording speed, and

the bias power level ( $P_b$ ) is substantially identical to the erase power level ( $P_e$ ) when the recording speed exceeds the chosen recording speed (29).

16. (new) The method of claim 12, wherein:

the erase pulses have a duty cycle of  $T_e/T_b$ , where  $T_e$  is the duration of an erase pulse and  $T_b$  is the time between two successive erase pulses, and

the duty cycle depends on the recording speed ( $V$ ).

17. (new) The method of claim 16, in which the duty cycle increases in a range between nearly zero and unity as the recording speed ( $V$ ) increases.

18. (new) A recording device comprising:

a radiation source for applying a radiation beam to an information layer of a recording medium;

means for moving the radiation beam along the information layer; and

control means to control the power of the radiation beam:

for causing a first area of the information layer to assume a first state to form a mark in response to an information signal; and

for pulsing the radiation beam including erase pulses having an erase power level ( $P_e$ ) and a bias power level ( $P_b$ ) between the erase pulses to a second area of the information layer, before and after the mark, to cause the second area of the information layer to assume a second state that is different than the first state, the bias power level ( $P_b$ ) being in a range between zero and the erase power level ( $P_e$ ).

19. (new) The recording device of claim 18, in which

the information layer includes a material having a phase that is reversibly changeable between the first state and the second state;

the first state is an amorphous state; and

the second state is a crystalline state.

20. (new) The recording device of claim 18, wherein the range of the bias power level ( $P_b$ ) is less than a write power level ( $P_w$ ).

21. (new) The recording device of claim 18, in which:

the bias power level ( $P_b$ ) increases in the range between zero and the erase power level ( $P_e$ ) as the recording speed ( $V$ ) increases when the recording speed is below a chosen recording speed; and

the bias power level ( $P_b$ ) is substantially identical to the erase power level ( $P_e$ ) when the recording speed is above the chosen recording speed.

22. (new) The recording device of claim 18, wherein:

the erase pulses have a duty cycle of  $T_e/T_b$ , where  $T_e$  is the duration of an erase pulse and  $T_b$  is the time between two successive erase pulses, and

the duty cycle depends on the recording speed ( $V$ ).

23. (new) The recording device of claim 22, in which the duty cycle increases in a range between nearly zero and unity as the recording speed ( $V$ ) increases.

24. (new) A recording medium containing an information signal, produced by the method of claim 12.